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LAW OFFICES OF TRAVIS L. DODD
A PROFESSIONAL CORPORATION
2490 HEYNEMAN HOLLOW
FALLBROOK, CA 92028

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| EXAMINER |
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LUNDGREN, JEFFREY S

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| ART UNIT | PAPER NUMBER |
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1639

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11/20/2007

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

09/848,727

Applicant(s)

GAU, VINCENT JEN-JR.

Examiner

Jeff Lundgren

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 7/19/07.
- 2a) ☒ This action is FINAL. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 83-95,98-104, 108, 112-118, 120-127 and 131-133 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 83-95,98-104, 108, 112-118, 120-127 and 131-133 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- ☐ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☐ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____
- ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date _____
- ☐ Notice of Informal Patent Application
- ☐ Other: _____

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DETAILED ACTION

Reassignment of Application

Please note that this application has been reassigned to Examiner Jeffrey Lundgren, in Art Unit 1639. In order to expedite accurate processing of the application papers, all future correspondence with the Office should reflect this change.

Status of the Claims

Claims 83-95, 98-104, 108, 112-118, 120-127 and 131-133 are pending in the instant application, and are the subject of the Office Action below.

Claim Rejections - 35 USC § 112

The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

The claims stand rejected as having new matter:

The rejection of claims 83-95, 98-104, 108, 112-118, 120-127, and now claims 131-133, under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement for having new matter, is maintained. The claims contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

Applicants allege that the claimed subject matter of having a gold reference electrode that has a self-assembled monolayer is taught in the instant application, and point to paragraph 64, as well as paragraphs 59, 75, 84 and 85. Applicants further allege that the recitation of the phrase “the self-assembly monolayer(es) include(es) [sic] biotinylated thiol molecules” provide additional support, and point to paragraphs 166, 173, 173 [sic] and 184. Applicants also point to paragraphs 122 and Figure 20 for support, and purports that a reference electrode with the SAM is illustrated.

Applicants also provide in their arguments a modified form of Figure 20, and have added labels "X" (that are not in the specification), and description corresponding to labels "X" that is not in the description. A similar presentation is made with Figure 19 (see page 12 of the reply).

Applicants arguments have been considered, however, are found unpersuasive for the following reasons.

Applicants provide a number of various embodiments and arrangements of certain electrodes and materials and/or coatings in the description, including the aforementioned paragraphs. However, contrary to Applicants allegations, Applicants do not provide a reference electrode that "*consists* of a single layer of an electrically conductive material," wherein that reference electrode has a SAM coating.

Applicants' disclosure does identify gold as a component of the reference electrode material, and does identify certain coatings that can be applied to the gold components of the electrodes. However, the specification does not describe a half-cell reaction having a reference electrode that "*consist*" of a single conductive layer with some additional SAM that is not part of the reference electrode. For example, in a three-electrode system including an Ag/AgCl reference electrode, the reference electrode *comprises* a Ag wire that has a AgCl coating, and is in fluid communication with a Cl⁻ containing solution. Such an arrangement is requirement to have the proper half-cell reaction, and would not be considered as a reference electrode that *consists* of a Ag wire. Such a system allows one to monitor the corresponding and well-known half-reaction that established a point of reference for the working electrode.

Furthermore, Applicants reference and description of Figures 19 and 20 in their reply provides an interpretation that is not literally described from the specification, nor is a reasonable interpretation of their disclosure. In fact, in Figure 20, it is seen that all of the electrodes are the same type of gold electrodes, as denoted by reference number 680 (see paragraphs 122-124). In Figure 19, reference number 680 is the middle surface feature, and in Figure 20, reference number 680 is the right-most surface feature; the left-most surface feature is neither numbered or defined.

Paragraph 159 generally makes mention of a reference electrode, but does little to support the claims:

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“Micro DNA sensor can be used for electrochemical detection without utilizing a conventional reference electrode because the bias potential is reasonable low (-0.1V), and the detection is short enough (20 seconds) to avoid the accumulation of charge at auxiliary electrode. This was confirmed with voltammograms of ferrocene and POD solution.”

Specification, paragraph 159.

Paragraph 165 very generally describes a three-electrode system, but does not elaborate in such a way to support the invention as claimed. Paragraph 167 provides certain experimental details, however, the currently claimed reference electrode is not adequately set forth. Additionally, the description relating to Figures 36-44 does not appear to be captured by the current claim language (figures appear to be omitted from the instant application).

Accordingly, the rejection over all claims is maintained.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Rejections of the claims as obvious are withdrawn in view of Applicants' amendment:

On page 14 of Applicants' reply, Applicants reserve their comments on the propriety of the obviousness rejection since they are of the opinion that the new matter rejection is improper. Based on this assumption, amended claim 83, which incorporates the limitations of previous claim 130, Applicants allege that amended claim 83 was never properly rejected.

The rejections of claims 83, 85-90, 94, 98-101, 103, 108, 112-118, 120, 123-125, and 129 under 35 U.S.C. 103(a) as being unpatentable over Choong et al. (US Patent 6,518,024) in view of Spinkle et al. (*Langmuir*, 1993, 9(7), pgs. 1821-1825) and Wink et al. (*The Analyst*, 1997, 122(4), pgs. 43R-50R), is withdrawn in view of Applicants' amendment to the claims.

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The rejection of claims 84, 91, and 92 under 35 U.S.C. 103(a) as being unpatentable over Choong et al. (US Patent 6,518,024) in view of Spinkle et al. (*Langmuir*, **1993**, 9(7), pgs. 1821-1825) and Wink et al. (*The Analyst*, **1997**, 122(4), pgs. 43R-50R) as applied to claims 83, 85-90, 94, 98-101, 103, 108, 112-118, 120, 123-125, and 129 above, and further in view of Cozzette et al. (US Patent 5,200,051) alone or as evidenced by Heller et al. (US Patent 5,403,700) regarding chromium as another type of metal-substrate adhesive, is withdrawn in view of Applicants' amendment to the claims.

The rejection of claims 93, 102, 121, and 122 under 35 U.S.C. 103(a) as being unpatentable over Choong et al. (US Patent 6,518,024) in view of Spinkle et al. (*Langmuir*, **1993**, 9(7), pgs. 1821-1825) and Wink et al. (*The Analyst*, **1997**, 122(4), pgs. 43R-50R) as applied to claims 83, 85-90, 94, 98-101, 103, 108, 112-118, 120, 123-125, and 129 above, and further in view of Weetall (US Patent 4,963,245), is withdrawn in view of Applicants' amendment to the claims.

The rejection of claim 95 under 35 U.S.C. 103(a) as being unpatentable over Choong et al. (US Patent 6,518,024) in view of Spinkle et al. (*Langmuir*, **1993**, 9(7), pgs. 1821-1825) and Wink et al. (*The Analyst*, **1997**, 122(4), pgs. 43R-50R) as applied to claims 83, 85-90, 94, 98-101, 103, 108, 112-118, 120, 123-125, and 129 above, and further in view of Han et al. (US Patent 6,268,161 B1), is withdrawn in view of Applicants' amendment to the claims.

Conclusions

No claim is allowable.

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period

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will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.


If Applicants should amend the claims, a complete and responsive reply will clearly identify where support can be found in the disclosure for each amendment. Applicants should point to the page and line numbers of the application corresponding to each amendment, and provide any statements that might help to identify support for the claimed invention (e.g., if the amendment is not supported *in ipsius verbis*, clarification on the record may be helpful). Should Applicants present new claims, Applicants should clearly identify where support can be found in the disclosure.

Any inquiry concerning this communication or earlier communications from the Examiner should be directed to Jeff Lundgren whose telephone number is 571-272-5541. The Examiner can normally be reached from 7:00 AM to 5:30 PM.

If attempts to reach the Examiner by telephone are unsuccessful, the Examiner's supervisor, James Schultz, can be reached on 571-272-0763. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

/JSL/


J. DOUGLAS SCHULTZ, PH.D.
SUPERVISORY PATENT EXAMINER